Prepared Statement of
Mark R. Maddox
Principal Deputy Assistant Secretary for Fossil Energy
Before the Subcommittee on Energy
Committee on Science
U.S. House of Representatives

April 27, 2005

Introduction

Chairman Biggert, Members of the Committee, it is a pleasure to join you today to present the Office of Fossil Energy's FY 2006 budget submission. The Department appreciates the support of the Chairman and the Members of the Committee over the past years and looks forward to working with you on budget issues related to the Fossil Energy Program.

Before I discuss the Fossil Energy budget in detail, I would like to say that in his February 2, 2005 State of the Union Address, the President underscored the need to restrain spending in order to sustain our economic prosperity. As part of this restraint, it is important that total discretionary and non-security spending be held to levels proposed in the FY 2006 President's Budget.

The budget savings and reforms in the Budget are important components of achieving the President's goal of cutting the budget deficit in half by 2009 and we urge the Congress to support these reforms. The FY 2006 President's Budget includes more than 150 reductions, reforms, and terminations in non-defense discretionary programs, of which two program terminations are reflected in the Department's Fossil Energy budget. Those program terminations are for the Natural Gas and Oil Technology programs. The Department wants to work with the Congress to achieve these savings.

The Office of Fossil Energy

At the core of the Department's mission are two fundamental objectives: to ensure America's readiness to respond to short-term energy supply disruptions and to provide the Nation with the best opportunity to tap the full potential of its abundant fossil fuel resources.

As the Nation strives to reduce its reliance on imported energy sources, DOE is leading the way by seeking new energy technologies and methodologies that promote the efficient and environmentally sound use of fossil fuels.

The United States relies on fossil fuels for about 85 percent of the energy it consumes and forecasts indicate U.S. reliance on these fuels could exceed 87 percent by 2025.

Accordingly, a key goal of DOE's fossil energy activities is to ensure that economic benefits from fossil fuels are compatible with the public's expectation for exceptional environmental quality and reduced energy security risks. This includes promoting the development of energy systems and practices that will provide current and future generations with energy that is clean, efficient, reasonably priced, and reliable.

The Department's programs focus on supporting the President's top initiatives for energy security, clean air, climate change, and coal research. FY 2006 DOE programs:

- Support the development of lower cost, more effective pollution control technologies embodied in the President's Coal Research Initiative to meet the goals of the President's Clear Skies Initiative;

- Expand the Nation's technological options for reducing greenhouse gases either by increasing power plant efficiencies or by capturing and isolating these gases from the atmosphere, and

- Measurably add to our energy security by providing a series of solutions to the Nation's energy challenges, beginning with the short-term emergency response provided by such programs as the Strategic Petroleum Reserve. Long-term responses to the energy security challenge include the production of hydrogen from coal to support and hasten development of the "hydrogen energy economy".

The President's Coal Research Initiative

Coal is our Nation's most abundant energy resource, with domestic reserves almost equal to the energy potential of the world's total oil reserves. About 90 percent of all coal produced in the United States is used for electricity generation, and over half of our Nation's electricity is produced by coal-fired power plants.

Meeting rising demand for clean, reliable and affordable electricity will require the use of coal for the foreseeable future, which in turn will require the development of new, environmentally sound technologies for coal-based electricity generation.

The FY 2006 budget supports the Department's continuing effort to fulfill President Bush's 10-year, $2 billion commitment to clean coal research, beginning with funding for the President's Coal Research Initiative (CRI) of $286 million, a $13 million increase over the 2005 enacted level.

In addition to increasing funding for CRI, the distribution of funds to various research and development components of the program has been modified to achieve the maximum program benefit in a disciplined budget environment through improved alignment with the Research and Development Investment Criteria.

Clean Coal Power Initiative and FutureGen

Within the President's Coal Research Initiative, the Clean Coal Power Initiative (CCPI) is a key component of the National Energy Policy to address the reliability and affordability of the Nation's electricity supply, particularly from its coal-based generation. The FY 2006 budget request includes $68 million for CCPI, $50 million of which is for demonstration projects, and $18 million for FutureGen, the world's first near-zero emissions coal-fueled power plant.

The $50 million allocated for the cooperative, cost-shared CCPI program between government and industry will be devoted to continuing the rapid demonstration of emerging technologies in coal-based power generation, which should accelerate commercialization by the private sector. Under CCPI, the Nation's power generators, equipment manufacturers, and coal producers help identify the most critical barriers to coal's use in the power sector. Technologies are selected with the goal of accelerating development and enhancing the potential for deployment of coal technologies that will economically meet environmental standards, while increasing the efficiency and reliability of coal power plants.

There are currently 10 active CCPI projects, six from the first competition, announced in January 2003, and four from the second, announced in October 2004. The projects have a total value of $2.7 billion, $550 million of which is the Department of Energy's cost share. The projects include an array of new cleaner and cheaper concepts for reducing sulfur dioxide, nitrogen oxides, and mercury – the three air pollutants targeted by the Clear Skies Initiative.

In FY 2006, the Department will begin developing a solicitation for a third round of projects.

The FutureGen program for FY 2006, backed up by a request for $257 million to become available in FY 2007 that corresponds to unexpended funds available from prior years' clean coal projects, will establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions, including carbon sequestration and gasification combined cycle, both integral components of the coal-fueled power plant of the future. FutureGen is important to demonstrating the future of coal use to meet the Nation's energy security and environmental challenges.

The FY 2006 Budget Request also includes $283 million for research and development programs in the President's Coal Research Initiative and Distributed Generation Systems, with an emphasis on advanced technologies that support the FutureGen vision of coal-fueled generation of electricity and hydrogen with essentially zero emissions. The programs will focus on all the key technologies for FutureGen: carbon sequestration, membrane technologies for oxygen and hydrogen separation, advanced turbines, fuel cells, coal to hydrogen conversion, gasifier related technologies, and other technologies.

Carbon Management

Several Clean Coal projects help to increase the available options for meeting the President's climate change goal of an 18 percent reduction in greenhouse gas intensity (carbon equivalent per GDP) by 2012, primarily by boosting the efficiencies of power plants – the less fuel used to generate electricity, the lower the emissions of greenhouse gases.

Carbon management has become an increasingly important element of our coal research program. Carbon sequestration – the capture and permanent storage of carbon dioxide – has emerged as one of the highest priorities in the Fossil Energy research program – a priority reflected in the proposed budget of $67.2 million in FY 2006, a nearly 50 percent increase over FY 2005's $45 million allocation.

One of the cornerstones of our carbon sequestration program, a national network of regional partnerships, will continue its important work in FY 2006. This Secretarial initiative has brought together the federal government, state agencies, universities, and private industry to determine which options for capturing and storing greenhouse gases are most practicable for specific areas of the country.

In addition, the international, Ministerial-level Carbon Sequestration Leadership Forum will continue to execute its mission of gathering data, exchanging information and participating in joint projects to advance carbon sequestration technology.

Hydrogen

Another aspect of the President's Coal Research Initiative is the production of hydrogen from coal. Hydrogen production research is important because hydrogen can serve as a clean fuel for tomorrow's advanced power technologies such as fuel cells for distributed generation, and for future transportation systems. Within the Fossil Energy program, we are requesting $22 million in FY 2006 for hydrogen-from-coal research, a 27 percent increase over the FY 2005 appropriation of $17 million.

Innovations for Existing Plants

While DOE continues its aggressive Research, Development and Demonstration projects for technologies of the future, it is also supporting the President's Clear Skies Initiative with short-term advanced for current technology. Innovations for Existing Plants is an important program that aims to achieve dramatic reductions in emissions of mercury, nitrogen oxide, particulate matter and byproducts of combustion from existing coal plants. We are requesting $24 million in FY 2006, a 25 percent boost over the FY 2005 appropriated level of $19 million.

Gasification Technology (Integrated Gasification Combined Cycle)

Advances to the leading edge integrated gasification combined cycle (IGCC) technology, which delivers significant increases in operating efficiency and reductions in emissions when compared to conventional coal-fired power plants, will intensify in FY 2006 with R&D projects aimed at reducing capital costs and technical risk, increasing plant efficiency and availability, and achieving essentially zero emissions. We are requesting $56 million for Gasification Technology in FY 2006 to improve and test gasification designs, materials, instrumentation and processes. This represents a 23 percent increase over the FY 2005 appropriation of $46 million.

Fuel Cells

Perhaps better known to the public for its potential to power automobiles, fuel cell technology also presents enormous potential to significantly improve environmental performance and energy security as a source of electrical power in stationary plants at or near the end user. Fuel cells are highly adaptable; they can be sued as a stand-alone power source, integrated with other generators, or connected to a central power grid.

Fuel cells can reduce criteria pollutants well below New Source Performance Standard levels, as well as thermal and acid rain precursor emissions. They offer important carbon management advantages because of their inherently low emissions and ultra-high operating efficiency.

In distributed generation systems, fuel cells can help meet peak demand requirements cost-effectively, and IGCC and FutureGen systems with fuel cell modules have the potential to significantly increase the efficiency of coal-based systems and achieve near-zero emissions.

Finally, fuel cells will be a vital element in the hydrogen economy of the future, using hydrogen from coal to both generate electric power and support the hydrogen fuel cell-powered automotive fleet envisioned in President Bush's FreedomCAR and Hydrogen Fuel initiatives.

Faced with these potential benefits the Department has refined its ongoing Fuel Cell Research and Development program to focus on the successful and highly promising work of the Solid State Energy Conversion Alliance (SECA). To better align the program with the R&D Investment Criteria, all fuel cell funding for FY 2006 has been re-directed to SECA from previous, less promising or completed R&D projects that ran in parallel with the SECA program.

This decision provides a two-fold budgeting benefit: the overall cost of the fuel cell program would be reduced by $10 million, to $65 million in FY 2006, while funding for the most promising research avenue, SECA, increases by nearly $12 million, or 20 percent, over the FY 2005 appropriation of $54 million.

In a disciplined budget environment, DOE has fashioned a Clean Coal program that answers the short-, mid- and long-term energy and environmental challenges of the Nation by effectively allocating resources to balance work on today's demonstration projects with research and development into tomorrow's technologies and, ultimately of FutureGen, the power plant of the future.

Oil and Natural Gas Technology

The FY 2006 budget request includes $20 million for the cost of orderly termination of the Oil and Gas technology programs, with prior-year funds to be used for the purposes appropriated. The decision to terminate these programs reflects a strategic assessment of the programs' technical effectiveness compared to other fossil energy programs that are more efficient and technically viable. This is in line with our commitment to deliver results for the American taxpayer. The focus in FY 2006 will be to conduct the orderly termination of these programs and I look forward to achieving this efficiency for the taxpayers. Funding requested in the FY 2006 budget will be used to fulfill legal obligations incurred in the termination process.

Other Fossil Energy Research and Development Activities

The budget request also includes $120 million for other activities in the Fossil Energy Research and Development program, including $99 million for headquarters and field office program direction and management support; $8 million for environmental restoration; $3 million for Federal matching funds for cooperative research and development projects; $1.8 million for natural gas import/export responsibilities; and $8 million for advanced metallurgical research at the Albany Research Center.

Strategic Petroleum Reserve (SPR)

The President has directed that the Strategic Petroleum Reserve (SPR) be filled to 700 million barrels. The mechanism for doing this is a cooperative effort with the Minerals Management Service to transfer to SPR exchange royalty oil from Federal leases in the Gulf of Mexico. Current projections are that SPR will reach its 700 million barrel target in mid-2005.

The FY 2006 budget request for SPR facilities development and management is $166 million, approximately equal to the FY 2005 budget appropriation. The SPR does not require additional funds in the oil acquisition account for transporting "royalty-in-kind" oil to the SPR, since these charges are the responsibility of the oil supplier. Also, SPR has the authority to "borrow" funds from other Departmental accounts to support an emergency SPR drawdown.

Northeast Home Heating Oil Reserve

FY 2006 activities for the Heating Oil Reserve will be funded with carryover from prior years. The 2 million barrel reserve remains ready to respond to a Presidential Order should there be a severe fuel oil supply disruption in the Northeast.

Naval Petroleum and Oil Shale Reserves

The FY 2006 Budget Request of $18.5 million funds environmental remediation, cultural resource, and equity determination activities required as a result of the Naval Petroleum Reserve No. 1 sales agreement. Also included is continued operation of the Rocky Mountain Oilfield Testing Center (RMOTC), the Naval Petroleum Reserve No. 3 in Wyoming, and lease management activities at Naval Petroleum Reserve No. 2.

Elk Hills School Lands Fund

The National Defense Authorization Act for FY 1996 required, subject to appropriation, DOE to pay 9 percent of the net proceeds of the Elk Hills sale to the Teachers Retirement Fund of the State of California with respect to its longstanding claims to two parcels of land ("school lands") within NPR-1. The $84 million budget for Elk Hills in FY 2006 reflects the advance appropriation of $36 million included in the FY 2005 Interior Appropriations Act and additional funds for a seventh payment. In light of the delays in equity finalization, discussions are ongoing.

Closing

Fossil Energy's programs are structured to promote the cost-effective development of energy systems and practices that will provide current and future generations with energy that is clean, efficient, reasonably priced, and reliable. Our focus is on supporting the President's top initiatives for energy security, clean air, climate change, and coal research. By reevaluating, refining and refocusing our programs and funding the most cost-effective and beneficial projects, the FY 2006 budget submission meets the Nation's critical needs for energy, environmental and national security.

Chairman Biggert, and members of the Committee, this completes my prepared statement. I would be happy to answer any questions you may have at this time.